

2026  
**昂宝电子**  
**MCU产品选型列表**

Your Best Choice MCU Platform Provider

2026 – May.

# MCU

# 产品区分

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8051&PIC Based 8-bit for  
Easy Use

02

ARM® Cortex®-M0 32-bit for Smart

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OB Solution & Applications

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# 01

## 8051&PIC Based 8-bit for Easy Use

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- 8-bit 8051 Flash MCU With Touch Key
- 8-bit 8051 Cost Effective MCU with Touch Key
- 8-bit 8051 Flash MCU With ADC
- 8-bit 8051 Cost Effective MCU With ADC & General-purpose
- 8-bit PIC Core Cost Effective MCU With ADC & General-purpose
- 8-bit PIC Core Cost Effective MCU With Touch key
- 8-bit 8051 Flash MCU With LCD Driver
- 8-bit 8051 Flash Standard MCU & USB Function

# 8051&PIC Based 8-bit for Easy Use

- 8-bit 8051 Flash MCU With Touch Key – OB39RxxT1/ OB39RxxT2 series
- 8-bit 8051 Cost Effective MCU with Touch Key – OB38A04T1/ OB38AxxT2/ OB38AxxT3B/ OB38RxxT1 series
- 8-bit 8051 Flash MCU With ADC – OB39RxxA3/ OB39RxxA5/ OB39RxxA6 series
- 8-bit 8051 Cost Effective MCU With ADC & General-purpose – OB38A08A1/A2/ OB38R08A1/ OB38S003~OB38S033 series
- 8-bit PIC Core Cost Effective MCU With ADC & General-purpose – OB36S01A1/ OB36A02A2 series
- 8-bit PIC Core Cost Effective MCU With Touch key – OB36A04T1 series
- 8-bit 8051 Flash MCU With LCD Driver – OB39A16D1/D2 series
- 8-bit 8051 Flash Standard MCU & USB Function – OB59A16G6/ OB59A16A5/ OB59A16U1 series

# 8-bit MCU Product Category

8051 & PIC Based 8-bit for Easy Use



不断精进演化的超性能内核

先进工艺高集成度外围模块

高速单周期8051 & PIC MCU

OB59 Series: Flash-ROM  
OB39 Series: Flash-ROM  
OB38 Series: MTP-ROM  
OB37 Series: OTP-ROM  
OB36 Series: MTP-ROM

标准封装系列  
OB59xxxx

工控，安防

低管脚系列  
OB39/38/37/36xxxx

小家电，消费性电子

## 内存空间

- 4KB ~ 128KB Flash
- 2KB~16KB MTP ROM
- 4KB OTP-ROM
- 64B ~ 6KB SRAM
- EEPROM
- ISP/IAP/ICP
- 最新工艺技术
- 最高保密性

## 高性能仿真模块

- 10-bit ADC, 900Ksps
- 12-bit ADC, 24-bit ADC
- OPA /比较器
- RC振荡器
- LED/LCD, Touch-key
- 稳压器与参考电压源
- 上电复位/掉电检测

## 集成外围

- UART/I2C/SPI/USB
- PCA/PWM
- RTC
- WDT
- 16x16硬件乘除器
- 硬件实时时钟
- 片内仿真功能

## 超高可靠度

- 高抗静电ESD
- 高抗干扰EMI/EFT
- 宽电压操作  
1.8~5.5V
- 工业温度规格  
-40 ~ +85°C

## 封装

- 最小至10-MSOP
- 最大至80-LQFP
- 标准型：  
DIP/SOP  
PLCC/QFP/LQFP
- 符合RoHS规范

# 8-bit Flash MCU With Touch Key

8051 Based 8-bit for Easy Use



| Part No.       | Package | I/O | Flash (KB) | RAM (B) | IRC (MHz) | Timer |     | Peripheral |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM |      | ISP/ICP  | Touch Key | Max. Speed (MHz) | LED Driver |     |
|----------------|---------|-----|------------|---------|-----------|-------|-----|------------|-----|-----|------|-----------------------|----------------------|-----|------|----------|-----------|------------------|------------|-----|
|                |         |     |            |         |           | 16bit | PCA | UART       | I2C | CH  | Bits |                       |                      | CH  | Bits |          |           |                  | COM        | SEG |
| OB39R32T1W20SP | SOP20   | 18  | 40         | 1024    | 22        | 4     | v   | 2          | 2   | 8   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 6         | 25               | 3          | 8   |
| OB39R32T1W24SP | SOP24   | 22  | 40         | 1024    | 22        | 4     | v   | 2          | 2   | 8   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 8         | 25               | 7          | 12  |
| OB39R32T1W24GP | SSOP24  | 22  | 40         | 1024    | 22        | 4     | v   | 2          | 2   | 8   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 8         | 25               | 7          | 12  |
| OB39R32T1W28SP | SOP28   | 26  | 40         | 1024    | 22        | 4     | v   | 2          | 2   | 9   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 8         | 25               | 5          | 13  |
| OB39R32T1W32VP | LQFP32  | 29  | 40         | 1024    | 22        | 4     | v   | 2          | 2   | 9   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 8         | 25               | 7          | 16  |
| OB39R62T1W20SP | SOP20   | 18  | 62         | 1024    | 22        | 4     | v   | 2          | 2   | 8   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 6         | 25               | 3          | 8   |
| OB39R62T1W24SP | SOP24   | 22  | 62         | 1024    | 22        | 4     | v   | 2          | 2   | 8   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 8         | 25               | 7          | 12  |
| OB39R62T1W24GP | SSOP24  | 22  | 62         | 1024    | 22        | 4     | v   | 2          | 2   | 8   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 8         | 25               | 7          | 12  |
| OB39R62T1W28SP | SOP28   | 26  | 62         | 1024    | 22        | 4     | v   | 2          | 2   | 9   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 8         | 25               | 5          | 13  |
| OB39R62T1W32VP | LQFP32  | 29  | 62         | 1024    | 22        | 4     | v   | 2          | 2   | 9   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 8         | 25               | 7          | 16  |
| OB39R32T2W20SP | SOP20   | 18  | 40         | 1408    | 22        | 4     | v   | 2          | 2   | 6   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 17        | 25               | 4          | 13  |
| OB39R32T2W24SP | SOP24   | 22  | 40         | 1408    | 22        | 4     | v   | 1          | 2   | 6   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 21        | 25               | 6          | 15  |
| OB39R32T2W24GP | SSOP24  | 22  | 40         | 1408    | 22        | 4     | v   | 2          | 2   | 6   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 21        | 25               | 6          | 15  |
| OB39R32T2W28SP | SOP28   | 26  | 40         | 1408    | 22        | 4     | v   | 2          | 2   | 8   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 24        | 25               | 7          | 16  |
| OB39R32T2W32VP | LQFP32  | 30  | 40         | 1408    | 22        | 4     | v   | 2          | 2   | 9   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 24        | 25               | 7          | 16  |
| OB39R62T2W20SP | SOP20   | 18  | 62         | 1408    | 22        | 4     | v   | 2          | 2   | 6   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 17        | 25               | 4          | 13  |
| OB39R62T2W24SP | SOP24   | 22  | 62         | 1408    | 22        | 4     | v   | 1          | 2   | 6   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 21        | 25               | 6          | 15  |
| OB39R62T2W24GP | SSOP24  | 22  | 62         | 1408    | 22        | 4     | v   | 2          | 2   | 6   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 21        | 25               | 6          | 15  |
| OB39R62T2W28SP | SOP28   | 26  | 62         | 1408    | 22        | 4     | v   | 2          | 2   | 8   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 24        | 25               | 7          | 16  |
| OB39R62T2W32VP | LQFP32  | 30  | 62         | 1408    | 22        | 4     | v   | 2          | 2   | 9   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 24        | 25               | 7          | 16  |

# 8-bit Cost Effective MCU with Touch Key

8051 Based 8-bit for Easy Use



| Part No.       | Package | I/O | ROM (KB) | RAM (B) | HIRC (MHz) | Timer |     | Peripheral |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM |      | ISP/ICP  | Touch Key | Max. Speed (MHz) | LED Driver |     | EEPROM (B) |
|----------------|---------|-----|----------|---------|------------|-------|-----|------------|-----|-----|------|-----------------------|----------------------|-----|------|----------|-----------|------------------|------------|-----|------------|
|                |         |     |          |         |            | 16bit | PCA | UART       | I2C | CH  | Bits |                       |                      | CH  | Bits |          |           |                  | COM        | SEG |            |
| OB38A04T1W08OP | SOP8    | 5   | 5        | 320     | 16         | 2     | -   | 1          | 1   | -   | -    | 2.4 ~ 5.5             | -40 ~ +85            | -   | -    | ISP, ICP | 3         | 16               | -          | -   | 128        |
| OB38A04T1W10MP | MSOP10  | 7   | 5        | 320     | 16         | 2     | -   | 1          | 1   | -   | -    | 2.4 ~ 5.5             | -40 ~ +85            | -   | -    | ISP, ICP | 7         | 16               | -          | -   | 128        |
| OB38A04T1W14OP | SOP14   | 11  | 5        | 320     | 16         | 2     | -   | 1          | 1   | -   | -    | 2.4 ~ 5.5             | -40 ~ +85            | -   | -    | ISP, ICP | 9         | 16               | -          | -   | 128        |
| OB38A04T1W16OP | SOP16   | 13  | 5        | 320     | 16         | 2     | -   | 1          | 1   | -   | -    | 2.4 ~ 5.5             | -40 ~ +85            | -   | -    | ISP, ICP | 10        | 16               | -          | -   | 128        |
| OB38A04T1W20BP | QFN20   | 17  | 5        | 320     | 16         | 2     | -   | 1          | 1   | -   | -    | 2.4 ~ 5.5             | -40 ~ +85            | -   | -    | ISP, ICP | 9         | 16               | -          | -   | 128        |
| OB38A08T1W10MP | MSOP10  | 7   | 8        | 512     | 16         | 2     | -   | 1          | 1   | -   | -    | 2.4 ~ 5.5             | -40 ~ +85            | -   | -    | ISP, ICP | 7         | 16               | -          | -   | 128        |
| OB38A08T1W14OP | SOP14   | 11  | 8        | 512     | 16         | 2     | -   | 1          | 1   | -   | -    | 2.4 ~ 5.5             | -40 ~ +85            | -   | -    | ISP, ICP | 9         | 16               | -          | -   | 128        |
| OB38A08T1W16OP | SOP16   | 13  | 8        | 512     | 16         | 2     | -   | 1          | 1   | -   | -    | 2.4 ~ 5.5             | -40 ~ +85            | -   | -    | ISP, ICP | 10        | 16               | -          | -   | 128        |

# 8-bit Cost Effective MCU with Touch Key



## 8051 Based 8-bit for Easy Use

| Part No.       | Package | I/O | ROM (KB) | RAM (B) | HIRC (MHz) | Timer |     | Peripheral |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM |      | ISP/ICP | Touch Key | Max. Speed (MHz) | LED Driver |     | EEPROM (B) |
|----------------|---------|-----|----------|---------|------------|-------|-----|------------|-----|-----|------|-----------------------|----------------------|-----|------|---------|-----------|------------------|------------|-----|------------|
|                |         |     |          |         |            | 16bit | PCA | UART       | I2C | CH  | Bits |                       |                      | CH  | Bits |         |           |                  | COM        | SEG |            |
| OB38A16T2W16OP | SOP16   | 13  | 16       | 1280    | 16         | 4     | v   | 1          | 2   | 7   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 3   | 10   | ICP     | 8         | 16               | 5          | 7   | 128        |
| OB38A16T2W20EP | TSSOP20 | 17  | 16       | 1280    | 16         | 4     | v   | 1          | 2   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ICP     | 13        | 16               | 3          | 13  | 128        |
| OB38A16T2W20SP | SOP20   | 17  | 16       | 1280    | 16         | 4     | v   | 1          | 2   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ICP     | 13        | 16               | 3          | 13  | 128        |
| OB38A16T2W24EP | TSSOP24 | 21  | 16       | 1280    | 16         | 4     | v   | 1          | 2   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ICP     | 13        | 16               | 7          | 13  | 128        |
| OB38A16T2W24SP | SOP24   | 21  | 16       | 1280    | 16         | 4     | v   | 1          | 2   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ICP     | 13        | 16               | 7          | 13  | 128        |
| OB38A16T2W28EP | TSSOP28 | 25  | 16       | 1280    | 16         | 4     | v   | 1          | 2   | 9   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ICP     | 16        | 16               | 7          | 16  | 128        |
| OB38A16T2W28SP | SOP28   | 25  | 16       | 1280    | 16         | 4     | v   | 1          | 2   | 9   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ICP     | 16        | 16               | 7          | 16  | 128        |

## 8051 Based 8-bit for Touch Key Enhance CS

| Part No.        | Package | I/O | ROM (KB) | RAM (B) | HIRC (MHz) | Timer |     | Peripheral |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM |      | ISP/ICP | Touch Key | Max. Speed (MHz) | LED Driver |     | EEPROM (B) |
|-----------------|---------|-----|----------|---------|------------|-------|-----|------------|-----|-----|------|-----------------------|----------------------|-----|------|---------|-----------|------------------|------------|-----|------------|
|                 |         |     |          |         |            | 16bit | PCA | UART       | I2C | CH  | Bits |                       |                      | CH  | Bits |         |           |                  | COM        | SEG |            |
| OB38A16T3BW16OP | SOP16   | 14  | 16       | 1280    | 16         | 4     | v   | 2          | 2   | 14  | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 3   | 10   | ICP     | 14        | 16               | 4          | 9   | 128        |
| OB38A16T3BW20SP | SOP20   | 18  | 16       | 1280    | 16         | 4     | v   | 2          | 2   | 18  | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ICP     | 16        | 16               | 5          | 12  | 128        |
| OB38A16T3BW28SP | SOP28   | 26  | 16       | 1280    | 16         | 4     | v   | 2          | 2   | 26  | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ICP     | 24        | 16               | 8          | 16  | 128        |
| OB38A16T3BW28EP | TSSOP28 | 26  | 16       | 1280    | 16         | 4     | v   | 2          | 2   | 26  | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ICP     | 24        | 16               | 8          | 16  | 128        |

# 8-bit Cost Effective MCU with Touch Key

8051 Based 8-bit for Easy Use



| Part No.       | Package | I/O | ROM (KB) | RAM (B) | HIRC (MHz) | Timer |     | Peripheral |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM |      | ISP/ICP  | Touch Key | Max. Speed (MHz) | LED Driver |     | EEPROM (B) |
|----------------|---------|-----|----------|---------|------------|-------|-----|------------|-----|-----|------|-----------------------|----------------------|-----|------|----------|-----------|------------------|------------|-----|------------|
|                |         |     |          |         |            | 16bit | PCA | UART       | I2C | CH  | Bits |                       |                      | CH  | Bits |          |           |                  | COM        | SEG |            |
| OB38R08T1W10GP | SSOP10  | 8   | 9        | 432     | 16         | 3     | v   | 1          | 1   | 2   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 2   | 10   | ISP, ICP | 5         | 16               | 3          | 3   | 128        |
| OB38R08T1W14OP | SOP14   | 12  | 9        | 432     | 16         | 3     | v   | 1          | 1   | 7   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 7         | 16               | 3          | 7   | 128        |
| OB38R08T1W16OP | SOP16   | 14  | 9        | 432     | 16         | 3     | v   | 1          | 1   | 7   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 3   | 10   | ISP, ICP | 7         | 16               | 5          | 7   | 128        |
| OB38R08T1W20EP | TSSOP20 | 18  | 9        | 432     | 16         | 3     | v   | 1          | 1   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 13        | 16               | 3          | 13  | 128        |
| OB38R08T1W20SP | SOP20   | 18  | 9        | 432     | 16         | 3     | v   | 1          | 1   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 13        | 16               | 3          | 13  | 128        |
| OB38R08T1W20DP | QFN20   | 18  | 9        | 432     | 16         | 3     | v   | 1          | 1   | 9   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 11        | 16               | 5          | 11  | 128        |
| OB38R08T1W24EP | TSSOP24 | 22  | 9        | 432     | 16         | 3     | v   | 1          | 1   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 13        | 16               | 7          | 13  | 128        |
| OB38R08T1W24SP | SOP24   | 22  | 9        | 432     | 16         | 3     | v   | 1          | 1   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 13        | 16               | 7          | 13  | 128        |
| OB38R08T1W28EP | TSSOP28 | 26  | 9        | 432     | 16         | 3     | v   | 1          | 1   | 9   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 16        | 16               | 7          | 16  | 128        |
| OB38R08T1W28SP | SOP28   | 26  | 9        | 432     | 16         | 3     | v   | 1          | 1   | 9   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 16        | 16               | 7          | 16  | 128        |
| OB38R16T1W10GP | SSOP10  | 8   | 16       | 768     | 16         | 3     | v   | 1          | 1   | 2   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 2   | 10   | ISP, ICP | 5         | 16               | 3          | 3   | 128        |
| OB38R16T1W14OP | SOP14   | 12  | 16       | 768     | 16         | 3     | v   | 1          | 1   | 7   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 7         | 16               | 3          | 7   | 128        |
| OB38R16T1W16OP | SOP16   | 14  | 16       | 768     | 16         | 3     | v   | 1          | 1   | 7   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 3   | 10   | ISP, ICP | 7         | 16               | 5          | 7   | 128        |
| OB38R16T1W20EP | TSSOP20 | 18  | 16       | 768     | 16         | 3     | v   | 1          | 1   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 13        | 16               | 3          | 13  | 128        |
| OB38R16T1W20SP | SOP20   | 18  | 16       | 768     | 16         | 3     | v   | 1          | 1   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 13        | 16               | 3          | 13  | 128        |
| OB38R16T1W20DP | QFN20   | 18  | 16       | 768     | 16         | 3     | v   | 1          | 1   | 9   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 11        | 16               | 5          | 11  | 128        |
| OB38R16T1W24EP | TSSOP24 | 22  | 16       | 768     | 16         | 3     | v   | 1          | 1   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 13        | 16               | 7          | 13  | 128        |
| OB38R16T1W24SP | SOP24   | 22  | 16       | 768     | 16         | 3     | v   | 1          | 1   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 13        | 16               | 7          | 13  | 128        |
| OB38R16T1W28EP | TSSOP28 | 26  | 16       | 768     | 16         | 3     | v   | 1          | 1   | 9   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 16        | 16               | 7          | 16  | 128        |
| OB38R16T1W28SP | SOP28   | 26  | 16       | 768     | 16         | 3     | v   | 1          | 1   | 9   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 16        | 16               | 7          | 16  | 128        |
| OB38S013W20EP  | TSSOP20 | 18  | 16       | 768     | 16         | 3     | v   | 1          | 1   | 9   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 11        | 16               | 5          | 11  | 128        |

# 8-bit Flash MCU With ADC

8051 Based 8-bit for Easy Use



| Part No.       | Package | I/O | Flash (KB) | RAM (B) | IRC (MHz) | Timer |     | Peripheral |     |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM |      | ISP/ICP  | Comparator | Max. Speed (MHz) |
|----------------|---------|-----|------------|---------|-----------|-------|-----|------------|-----|-----|-----|------|-----------------------|----------------------|-----|------|----------|------------|------------------|
|                |         |     |            |         |           | 16bit | PCA | UART       | SPI | I2C | CH  | Bits |                       |                      | CH  | Bits |          |            |                  |
| OB39R08A5U10MP | MSOP10  | 8   | 8          | 256     | 22        | 3     | -   | 1          | -   | 1   | 8   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 4   | 10   | ICP      | 1          | 25               |
| OB39R08A3U14OP | SOP14   | 12  | 8          | 512     | 22        | 3     | v   | 1          | 1   | 1   | 2   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 2   | 10   | ISP, ICP | 1          | 25               |
| OB39R08A3U16OP | SOP16   | 14  | 8          | 512     | 22        | 3     | v   | 1          | -   | 1   | 5   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 3   | 10   | ISP, ICP | 1          | 25               |
| OB39R08A3U20GP | SSOP20  | 18  | 8          | 512     | 22        | 3     | v   | 1          | 1   | 1   | 7   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 2          | 25               |
| OB39R08A3U20EP | TSSOP20 | 18  | 8          | 512     | 22        | 3     | v   | 1          | 1   | 1   | 7   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 2          | 25               |
| OB39R08A3U20BP | QFN20   | 18  | 8          | 512     | 22        | 3     | v   | 1          | 1   | 1   | 7   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 2          | 25               |
| OB39R16A3U10MP | MSOP10  | 8   | 16         | 512     | 22        | 3     | v   | 1          | -   | 1   | 2   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 2   | 10   | ISP, ICP | -          | 25               |
| OB39R16A3U14OP | SOP14   | 12  | 16         | 512     | 22        | 3     | v   | 1          | 1   | 1   | 2   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 2   | 10   | ISP, ICP | 1          | 25               |
| OB39R16A3U16OP | SOP16   | 14  | 16         | 512     | 22        | 3     | v   | 1          | -   | 1   | 5   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 3   | 10   | ISP, ICP | 1          | 25               |
| OB39R16A3U20GP | SSOP20  | 18  | 16         | 512     | 22        | 3     | v   | 1          | 1   | 1   | 7   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 2          | 25               |
| OB39R16A3U20EP | TSSOP20 | 18  | 16         | 512     | 22        | 3     | v   | 1          | 1   | 1   | 7   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 2          | 25               |
| OB39R16A3U20BP | QFN20   | 18  | 16         | 512     | 22        | 3     | v   | 1          | 1   | 1   | 7   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 2          | 25               |
| OB39R16A6U24SP | SOP24   | 22  | 16         | 1280    | 22        | 3     | v   | 1          | 1   | 1   | 8   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 4   | 14   | ISP, ICP | -          | 25               |
| OB39R16A6U28SP | SOP28   | 26  | 16         | 1280    | 22        | 3     | v   | 1          | 1   | 1   | 8   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 4   | 14   | ISP, ICP | -          | 25               |
| OB39R16A6U32VP | LQFP32  | 30  | 16         | 1280    | 22        | 3     | v   | 1          | 1   | 1   | 8   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 4   | 14   | ISP, ICP | -          | 25               |

# 8-bit Cost Effective MCU With ADC & General-purpose

8051 Based 8-bit for Easy Use

## 8-bit Cost Effective MCU With ADC & General-purpose

| Part No.       | Package | I/O | ROM (KB) | RAM (B) | HIRC (MHz) | Timer |     | Peripheral |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM |      | ISP/ICP | Comparator | OPA | Max. Speed (MHz) | EEPROM (B) |
|----------------|---------|-----|----------|---------|------------|-------|-----|------------|-----|-----|------|-----------------------|----------------------|-----|------|---------|------------|-----|------------------|------------|
|                |         |     |          |         |            | 16bit | PCA | UART       | I2C | CH  | Bits |                       |                      | CH  | Bits |         |            |     |                  |            |
| OB38A08A2W08OP | SOP8    | 6   | 8        | 256     | 8          | 4     | v   | 1          | 1   | 4   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 2   | 10   | ICP     | -          | -   | 8                | 128        |
| OB38A08A1W10MP | MSOP10  | 8   | 8        | 256     | 8          | 4     | v   | 1          | 1   | 6   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 2   | 10   | ICP     | -          | 1   | 8                | 128        |
| OB38A08A1W16OP | SOP16   | 14  | 8        | 256     | 8          | 4     | v   | 1          | 1   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 2   | 10   | ICP     | 1          | 1   | 8                | 128        |
| OB38A08A1W20EP | TSSOP20 | 18  | 8        | 256     | 8          | 4     | v   | 1          | 1   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 2   | 10   | ICP     | 2          | 1   | 8                | 128        |

## 8-bit Cost Effective MCU With ADC & General-purpose

| Part No.       | Package | I/O | ROM (KB) | RAM (B) | HIRC (MHz) | Timer |     | Peripheral |     |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM |      | ISP/ICP  | Comparator | Max. Speed (MHz) | EEPROM (B) |
|----------------|---------|-----|----------|---------|------------|-------|-----|------------|-----|-----|-----|------|-----------------------|----------------------|-----|------|----------|------------|------------------|------------|
|                |         |     |          |         |            | 16bit | PCA | UART       | SPI | I2C | CH  | Bits |                       |                      | CH  | Bits |          |            |                  |            |
| OB38R08A1W08OP | SOP8    | 6   | 8        | 512     | 16         | 3     | v   | -          | -   | 1   | 3   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 3   | 10   | ISP, ICP | -          | 16               | 128        |
| OB38R08A1W10MP | MSOP10  | 8   | 8        | 512     | 16         | 3     | v   | 1          | -   | 1   | 4   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 1   | 10   | ISP, ICP | 1          | 16               | 128        |
| OB38R08A1W14OP | SOP14   | 12  | 8        | 512     | 16         | 3     | v   | 1          | -   | 1   | 3   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 2   | 10   | ISP, ICP | 1          | 16               | 128        |
| OB38R08A1W16OP | SOP16   | 14  | 8        | 512     | 16         | 3     | v   | 1          | -   | 1   | 5   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 3   | 10   | ISP, ICP | 1          | 16               | 128        |
| OB38R08A1W20SP | SOP20   | 18  | 8        | 512     | 16         | 3     | v   | 1          | 1   | 1   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 2          | 16               | 128        |
| OB38R08A1W20GP | SSOP20  | 18  | 8        | 512     | 16         | 3     | v   | 1          | 1   | 1   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 2          | 16               | 128        |
| OB38R08A1W20BP | QFN20   | 18  | 8        | 512     | 16         | 3     | v   | 1          | 1   | 1   | 8   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 2          | 16               | 128        |

# 8-bit Cost Effective MCU With ADC & General-purpose



8051 Based 8-bit for Easy Use

## 8-bit Cost Effective MCU With ADC & General-purpose

| Part No.      | Package | I/O | ROM<br>(KB) | RAM<br>(B) | HIRC<br>(MHz) | Timer |     | Peripheral |     |     | ADC |      | Operating<br>Voltage (V) | Operating<br>Temp. ( ° C ) | PWM |      | ISP/ICP | Comparator | Max.<br>Speed<br>(MHz) | LED<br>Driver |     | EEPROM<br>(B) |
|---------------|---------|-----|-------------|------------|---------------|-------|-----|------------|-----|-----|-----|------|--------------------------|----------------------------|-----|------|---------|------------|------------------------|---------------|-----|---------------|
|               |         |     |             |            |               | 16bit | PCA | UART       | SPI | I2C | CH  | Bits |                          |                            | CH  | Bits |         |            |                        | COM           | SEG |               |
| OB38S003W20EP | TSSOP20 | 18  | 8           | 512        | 16            | 3     | v   | 1          | 1   | 1   | 8   | 12   | 2.4 ~ 5.5                | -40 ~ +85                  | 4   | 10   | ISP,ICP | 2          | 16                     | -             | -   | 128           |
| OB38S023W20EP | TSSOP20 | 18  | 16          | 1280       | 16            | 4     | v   | 1          | -   | 2   | 9   | 12   | 2.4 ~ 5.5                | -40 ~ +85                  | 4   | 10   | ICP     | -          | 16                     | 6             | 11  | 128           |
| OB38S033W20EP | TSSOP20 | 18  | 16          | 512        | 16            | 3     | -   | 2          | -   | 1   | 16  | 12   | 2.4 ~ 5.5                | -40 ~ +85                  | 4   | 10   | ICP     | -          | 16                     | -             | -   | 128           |
| OB38S033W20BP | QFN20   | 18  | 16          | 512        | 16            | 3     | -   | 2          | -   | 1   | 16  | 12   | 2.4 ~ 5.5                | -40 ~ +85                  | 4   | 10   | ICP     | -          | 16                     | -             | -   | 128           |

# 8-bit OTP MCU With ADC & General-purpose



8051 Based 8-bit for Easy Use

| Part No.       | Package | I/O | ROM<br>(KB) | RAM<br>(B) | HIRC<br>(MHz) | Timer |     | Peripheral |     |     | ADC |      | Operating<br>Voltage<br>(V) | Operating<br>Temp.<br>(°C) | PWM |      | ISP/ICP | Max.<br>Speed<br>(MHz) |
|----------------|---------|-----|-------------|------------|---------------|-------|-----|------------|-----|-----|-----|------|-----------------------------|----------------------------|-----|------|---------|------------------------|
|                |         |     |             |            |               | 16bit | PCA | UART       | SPI | I2C | CH  | Bits |                             |                            | CH  | Bits |         |                        |
| OB37R04G1W10MP | MSOP10  | 8   | 4           | 128        | 24            | 2     | -   | -          | -   | 1   | -   | -    | 2.4 ~ 5.5                   | -40 ~ +85                  | -   | -    | ICP     | 24                     |
| OB37R04G1W14OP | SOP14   | 12  | 4           | 128        | 24            | 2     | -   | -          | -   | 1   | -   | -    | 2.4 ~ 5.5                   | -40 ~ +85                  | -   | -    | ICP     | 24                     |
| OB37R04G1W16OP | SOP16   | 14  | 4           | 128        | 24            | 2     | -   | -          | -   | 1   | -   | -    | 2.4 ~ 5.5                   | -40 ~ +85                  | -   | -    | ICP     | 24                     |
| OB37R04A1W10MP | MSOP10  | 8   | 4           | 128        | 24            | 3     | v   | -          | -   | 1   | 4   | 10   | 2.4 ~ 5.5                   | -40 ~ +85                  | -   | -    | ICP     | 24                     |
| OB37R04A1W14OP | SOP14   | 12  | 4           | 128        | 24            | 3     | v   | -          | -   | 1   | 6   | 10   | 2.4 ~ 5.5                   | -40 ~ +85                  | -   | -    | ICP     | 24                     |
| OB37R04A1W16OP | SOP16   | 14  | 4           | 128        | 24            | 3     | v   | -          | -   | 1   | 8   | 10   | 2.4 ~ 5.5                   | -40 ~ +85                  | -   | -    | ICP     | 24                     |

# 8-bit PIC core Cost Effective MCU



PIC Core Based 8-bit for Easy Use

## 8-bit PIC Core Cost Effective MCU With ADC & General-purpose

| Part No.       | Package | I/O | ROM (B) | RAM (B) | HIRC (MHz) | Timer |     | Peripheral |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | ISP/ICP | PWM |      | Ext-Interrupt (IOC) | Max. Speed (MHz) | EEPROM (B) |
|----------------|---------|-----|---------|---------|------------|-------|-----|------------|-----|-----|------|-----------------------|----------------------|---------|-----|------|---------------------|------------------|------------|
|                |         |     |         |         |            | 8bit  | PCA | UART       | I2C | CH  | Bits |                       |                      |         | CH  | Bits |                     |                  |            |
| OB36S01A1W10MP | MSOP10  | 8   | 1K*13   | 64      | 8          | 2     | -   | 1          | -   | 4   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | ICP     | -   | -    | 4                   | 8                | 24         |
| OB36S01A1W08OP | SOP8    | 6   | 1K*13   | 64      | 8          | 2     | -   | 1          | -   | 4   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | ICP     | -   | -    | 2                   | 8                | 24         |
| OB36A02A2W08OP | SOP8    | 6   | 2K*16   | 256     | 16         | 2     | -   | -          | 1   | 6   | 12   | 2.2 ~ 5.5             | -40 ~ +85            | ICP     | 4   | 10   | 2                   | 16               | 128        |
| OB36A02A2W16OP | SOP16   | 14  | 2K*16   | 256     | 16         | 2     | -   | -          | 1   | 14  | 12   | 2.2 ~ 5.5             | -40 ~ +85            | ICP     | 4   | 10   | 2                   | 16               | 128        |

## 8-bit PIC Core Cost Effective MCU With Touch key

| Part No.       | Package | I/O | ROM (B) | RAM (B) | HIRC (MHz) | Timer |      | Peripheral |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | ISP/ICP | PWM |      | Touch key | Max. Speed (MHz) | EEPROM (B) |
|----------------|---------|-----|---------|---------|------------|-------|------|------------|-----|-----|------|-----------------------|----------------------|---------|-----|------|-----------|------------------|------------|
|                |         |     |         |         |            | 16bit | 8bit | UART       | I2C | CH  | Bits |                       |                      |         | CH  | Bits |           |                  |            |
| OB36A04T1W16OP | SOP16   | 14  | 4K*16   | 512     | 16         | 1     | 1    | -          | -   | 14  | 12   | 2.2 ~ 5.5             | -40 ~ +85            | ICP     | 4   | 10   | 8         | 16               | 128        |

# 8-bit Flash MCU With LCD Driver

8051 Based 8-bit for Easy Use



| Part No.       | Package | I/O | Flash (KB) | RAM (B) | IRC (MHz) | Timer |     | Peripheral |     |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM |      | ISP/ICP  | Comparator | Max. Speed (MHz) | RTC | LCD  |
|----------------|---------|-----|------------|---------|-----------|-------|-----|------------|-----|-----|-----|------|-----------------------|----------------------|-----|------|----------|------------|------------------|-----|------|
|                |         |     |            |         |           | 16bit | PCA | UART       | SPI | I2C | CH  | Bits |                       |                      | CH  | Bits |          |            |                  |     |      |
| OB39A16D1W48VP | LQFP48  | 41  | 16         | 512     | 22        | 3     | v   | -          | 1   | 1   | 7   | 10   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 1          | 25               | v   | 4x27 |
| OB39A16D2W48VP | LQFP48  | 41  | 16         | 512     | 22        | 3     | v   | 1          | 1   | 1   | 7   | 10   | 2.2 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | -          | 25               | v   | 4x27 |

# 8-bit Flash Standard MCU & USB Function

8051 Based 8-bit for Easy Use

| Part No.       | Package | I/O | Flash (KB) | RAM (B) | IRC (MHz) | Timer |     | Peripheral |     |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM |      | ISP/ICP  | Comparator | Max. Speed (MHz) | RTC | USB |
|----------------|---------|-----|------------|---------|-----------|-------|-----|------------|-----|-----|-----|------|-----------------------|----------------------|-----|------|----------|------------|------------------|-----|-----|
|                |         |     |            |         |           | 16bit | PCA | UART       | SPI | I2C | CH  | Bits |                       |                      | CH  | Bits |          |            |                  |     |     |
| OB59A16U1U48VP | LQFP48  | 38  | 64         | 6400    | 22        | 3     | v   | 2          | 1   | 1   | 8   | 10   | 2.2 ~ 5.5             | -40 ~ +85            | 8   | 14   | ISP, ICP | 2          | 25               | -   | 2.0 |
| OB59R16G6W44QP | QFP44   | 42  | 64         | 1280    | 22        | 3     | v   | 1          | 1   | 1   | -   | -    | 2.7 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | -          | 25               | -   | -   |
| OB59R16G6W48VP | LQFP48  | 46  | 64         | 1280    | 22        | 3     | v   | 1          | 1   | 1   | -   | -    | 2.7 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | -          | 25               | -   | -   |
| OB59R16A5L44QP | QFP44   | 42  | 64         | 2304    | 24        | 3     | v   | 2          | 1   | 1   | 8   | 10   | 2.7 ~ 3.6             | -40 ~ +85            | 4   | 10   | ISP, ICP | 2          | 25               | v   | -   |
| OB59R16A5L48VP | LQFP48  | 46  | 64         | 2304    | 24        | 3     | v   | 2          | 1   | 1   | 8   | 10   | 2.7 ~ 3.6             | -40 ~ +85            | 4   | 10   | ISP, ICP | 2          | 25               | v   | -   |
| OB59R16A5C44QP | QFP44   | 42  | 64         | 2304    | 24        | 3     | v   | 2          | 1   | 1   | 8   | 10   | 4.5 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 2          | 25               | v   | -   |
| OB59R16A5C48VP | LQFP48  | 46  | 64         | 2304    | 24        | 3     | v   | 2          | 1   | 1   | 8   | 10   | 4.5 ~ 5.5             | -40 ~ +85            | 4   | 10   | ISP, ICP | 2          | 25               | v   | -   |

# 02

## ARM® Cortex®-M0 32-bit for Smart

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- 32-bit Flash MCU With ADC
  - 32-bit Flash MCU With USB

# ARM® Cortex®-M0 32-bit for Smart

- 32-bit Flash MCU With ADC – OB90RxxA1~A3/ OB90A128A1/ OB90A256A1 series
- 32-bit Flash MCU With USB – OB90A64U1 series

# 32-bit MCU Product Category

ARM® Cortex®-M0 32-bit for Smart



不断精进演化的超性能内核

先进工艺高集成度外围模块

ARM Cortex-M0

系统方案芯片  
OB662x

高性能泛用芯片  
OB90xxxx

## 内存空间

- 32KB ~ 256KB Flash
- 4KB ~ 32KB SRAM
- EEPROM
- ISP/IAP/ICP
- 最新工艺技术
- 最高保密性

## 高性能模拟模块

- 12-bit ADC, 1Msps
- 16-bit Sigma-delta ADC
- OPA / 比较器
- RC 振荡器
- PLL
- 稳压器与参考电压源
- 上电复位/掉电检测

## 集成外围

- UART/I2C/SPI/USB
- Timer/PWM/RTC
- LED/LCD Driver
- CORDIC
- DMA
- MDU 硬件乘除器
- 片内仿真功能

## 超高可靠度

- 高抗静电ESD
- 高抗干扰EMI/EFT
- 宽电压操作  
1.8~5.5V
- 工业温度规格  
-40 ~ +105°C

## 封装形态

- 最小至20-TSSOP
- 最大至64-LQFP
- 标准型：  
TSSOP/QFN/LQFP
- 符合RoHS规范

# 32-bit Flash MCU With ADC

ARM® Cortex®-M0 32-bit for Smart



| Part No.        | Package | I/O | Flash (KB) | RAM (KB) | Max. Speed (MHz) | Timer |       |     | Peripheral |     |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM-M |      | Int. Vref | Comparator | MDU |
|-----------------|---------|-----|------------|----------|------------------|-------|-------|-----|------------|-----|-----|-----|------|-----------------------|----------------------|-------|------|-----------|------------|-----|
|                 |         |     |            |          |                  | 32bit | 16bit | RTC | UART       | SPI | I2C | CH  | Bits |                       |                      | CH    | Bits |           |            |     |
| OB90R32A1U20EP  | TSSOP20 | 17  | 32         | 4        | 50               | 2     | 2     | -   | 2          | 1   | 2   | 4   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 2          | v   |
| OB90R32A1U32CP  | QFN32   | 29  | 32         | 4        | 50               | 2     | 2     | -   | 2          | 1   | 2   | 8   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 3          | v   |
| OB90R32A1U32VP  | LQFP32  | 29  | 32         | 4        | 50               | 2     | 2     | -   | 2          | 1   | 2   | 8   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 3          | v   |
| OB90R64A1U20EP  | TSSOP20 | 17  | 64         | 8        | 50               | 2     | 2     | -   | 2          | 1   | 2   | 4   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 2          | v   |
| OB90R64A1U32CP  | QFN32   | 29  | 64         | 8        | 50               | 2     | 2     | -   | 2          | 1   | 2   | 8   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 3          | v   |
| OB90R64A1U32VP  | LQFP32  | 29  | 64         | 8        | 50               | 2     | 2     | -   | 2          | 1   | 2   | 8   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 3          | v   |
| OB90R32A2U20EP  | TSSOP20 | 18  | 32         | 4        | 50               | 2     | 2     | -   | 2          | 1   | 2   | 4   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 2          | v   |
| OB90R32A2U32CP  | QFN32   | 30  | 32         | 4        | 50               | 2     | 2     | -   | 2          | 1   | 2   | 8   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 3          | v   |
| OB90R32A2U32VP  | LQFP32  | 30  | 32         | 4        | 50               | 2     | 2     | -   | 2          | 1   | 2   | 8   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 3          | v   |
| OB90R64A2U20EP  | TSSOP20 | 18  | 64         | 8        | 50               | 2     | 2     | -   | 2          | 1   | 2   | 4   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 2          | v   |
| OB90R64A2U32CP  | QFN32   | 30  | 64         | 8        | 50               | 2     | 2     | -   | 2          | 1   | 2   | 8   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 3          | v   |
| OB90R64A2U32VP  | LQFP32  | 30  | 64         | 8        | 50               | 2     | 2     | -   | 2          | 1   | 2   | 8   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 3          | v   |
| OB90R128A3U28EP | TSSOP28 | 25  | 128        | 8        | 72               | -     | 2     | v   | 2          | 2   | 2   | 13  | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 4     | 16   | v         | -          | -   |

# 32-bit Flash MCU With ADC

ARM® Cortex®-M0 32-bit for Smart



| Part No.        | Package | I/O | Flash (KB) | RAM (KB) | Max. Speed (MHz) | Timer |       |     | Peripheral |     |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM-M |      | Int. Vref | Comparator | MDU | CORDIC | QEI |
|-----------------|---------|-----|------------|----------|------------------|-------|-------|-----|------------|-----|-----|-----|------|-----------------------|----------------------|-------|------|-----------|------------|-----|--------|-----|
|                 |         |     |            |          |                  | 32bit | 16bit | RTC | UART       | SPI | I2C | CH  | Bits |                       |                      | CH    | Bits |           |            |     |        |     |
| OB90A128A1U48VP | LQFP48  | 43  | 128        | 16       | 50               | 2     | 2     | v   | 2          | 1   | 2   | 16  | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 12    | 16   | v         | 4          | v   | v      | v   |
| OB90A128A1U64VP | LQFP64  | 58  | 128        | 16       | 50               | 2     | 2     | v   | 2          | 1   | 2   | 16  | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 12    | 16   | v         | 4          | v   | v      | v   |

ARM® Cortex®-M0 32-bit for Smart

| Part No.        | Package | I/O | Flash (KB) | RAM (KB) | Max. Speed (MHz) | Timer |       |     | Peripheral |     |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM-M |      | Int. Vref | Comparator | DMA | CRC | AES (128Bit) | LCD (COMxSEG) |
|-----------------|---------|-----|------------|----------|------------------|-------|-------|-----|------------|-----|-----|-----|------|-----------------------|----------------------|-------|------|-----------|------------|-----|-----|--------------|---------------|
|                 |         |     |            |          |                  | 32bit | 16bit | RTC | UART       | SPI | I2C | CH  | Bits |                       |                      | CH    | Bits |           |            |     |     |              |               |
| OB90A256A1U64VP | LQFP64  | 59  | 256        | 32       | 33               | 2     | 3     | -   | 6          | 4   | 1   | 8   | 16   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 24   | v         | 2          | v   | v   | v            | 8x17          |
| OB90A256A1U80LP | LQFP80  | 69  | 256        | 32       | 33               | 2     | 3     | v   | 6          | 4   | 1   | 8   | 16   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 24   | v         | 2          | v   | v   | v            | 8x24          |

# 32-bit Flash MCU With USB

ARM® Cortex®-M0 32-bit for Smart



| Part No.       | Package | I/O | Flash<br>(KB) | RAM<br>(KB) | Max. Speed<br>(MHz) | Timer |       |     | Peripheral |     |     |     | ADC |      | Operating<br>Voltage<br>(V) | Operating<br>Temp.<br>(°C) | PWM-M |      | DMA | USB 2.0<br>(Full speed) |
|----------------|---------|-----|---------------|-------------|---------------------|-------|-------|-----|------------|-----|-----|-----|-----|------|-----------------------------|----------------------------|-------|------|-----|-------------------------|
|                |         |     |               |             |                     | 32bit | 16bit | RTC | UART       | SPI | I2C | I2S | CH  | Bits |                             |                            | CH    | Bits |     |                         |
| OB90A64U1U48VP | LQFP48  | 40  | 64            | 32          | 72                  | 1     | 5     | v   | 3          | 3   | 2   | 1   | 10  | 12   | 1.8 ~ 5.5                   | -40 ~ +105                 | 6     | 16   | 4   | v                       |

# 03

## Motor Control for Anywhere

- 
- BLDC/PMSM Motor Controller
  - BLDC/PMSM Solution

# Motor Control for Anywhere

- 8-bit Flash BLDC/PMSM Controller – OB39A16M1/ OB39A16M2/ OB39A32M1 series
- 8-bit BLDC/PMSM Controller with Hardware FOC Algorithm – OB6631 series
- 32-bit Flash BLDC/PMSM Controller with FOC Algorithm – OB90AxxM1/ OB90AxxM2 series
- 8-bit BLDC/PMSM Controller Build-in Gate driver, Up to DC 150V – OB661x series
- 8-bit BLDC/PMSM Controller with Hardware FOC Build-in Gate driver, Up to DC 650V – OB663x series
- 32-bit BLDC/PMSM Controller with FOC Algorithm and Build-in Gate driver, Up to DC 150V – OB662x series

# BLDC/PMSM Motor Controller

Motor Control for Anywhere



## 8-bit Flash BLDC/PMSM Controller

| Part No.       | Package | I/O | Flash (KB) | RAM (B) | IRC (MHz) | Timer |     | Peripheral |     |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM-M |      | ISP/ICP  | Comparator | OPA |
|----------------|---------|-----|------------|---------|-----------|-------|-----|------------|-----|-----|-----|------|-----------------------|----------------------|-------|------|----------|------------|-----|
|                |         |     |            |         |           | 16bit | PCA | UART       | SPI | I2C | CH  | Bits |                       |                      | CH    | Bits |          |            |     |
| OB39A16M1U16SP | SOP16   | 14  | 16         | 1280    | 22        | 2     | v   | 1          | 1   | 1   | 2   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 6     | 14   | ISP, ICP | 3          | -   |
| OB39A16M1U20SP | SOP20   | 18  | 16         | 1280    | 22        | 2     | v   | 1          | 1   | 1   | 6   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 6     | 14   | ISP, ICP | 3          | -   |
| OB39A16M1U32VP | LQFP32  | 30  | 16         | 1280    | 22        | 2     | v   | 1          | 1   | 1   | 8   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 8     | 14   | ISP, ICP | 3          | -   |
| OB39A16M2U20EP | TSSOP20 | 18  | 16         | 768     | 24        | 3     | v   | 1          | -   | 1   | 16  | 12   | 1.8 ~ 5.5             | -40 ~ +85            | 6     | 14   | ISP, ICP | 2          | 1   |
| OB39A16M2U32VP | LQFP32  | 30  | 16         | 768     | 24        | 3     | v   | 1          | -   | 1   | 16  | 12   | 1.8 ~ 5.5             | -40 ~ +85            | 6     | 14   | ISP, ICP | 2          | 1   |
| OB39A32M1U32VP | LQFP32  | 30  | 32         | 1280    | 24        | 4     | v   | 1          | -   | 1   | 13  | 12   | 1.8 ~ 5.5             | -40 ~ +85            | 6     | 14   | ISP, ICP | 3          | 1   |
| OB39A32M1U32CP | QFN32   | 30  | 32         | 1280    | 24        | 4     | v   | 1          | -   | 1   | 13  | 12   | 1.8 ~ 5.5             | -40 ~ +85            | 6     | 14   | ISP, ICP | 3          | 1   |

## 8-bit BLDC/PMSM Controller with Hardware FOC Algorithm

| Part No.  | Package | I/O | Flash (KB) | RAM (B) | IRC (MHz) | Timer |     | Peripheral |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM-M |      | ISP/ICP  | Comparator | OPA | CRC8 | HW FOC PWM (KHZ) |
|-----------|---------|-----|------------|---------|-----------|-------|-----|------------|-----|-----|------|-----------------------|----------------------|-------|------|----------|------------|-----|------|------------------|
|           |         |     |            |         |           | 16bit | PCA | UART       | I2C | CH  | Bits |                       |                      | CH    | Bits |          |            |     |      |                  |
| OB6631VKP | TSSOP24 | 22  | 16         | 1280    | 16        | 2     | v   | 1          | 1   | 6   | 12   | 2.4 ~ 5.5             | -40 ~ +85            | 6     | 14   | ISP, ICP | 3          | 3   | v    | 50               |

# BLDC/PMSM Motor Controller

Motor Control for Anywhere



## 32-bit Flash BLDC/PMSM Controller with FOC Algorithm

| Part No.       | Package | I/O | Flash (KB) | RAM (KB) | IRC (MHz) | Timer |       |     | Peripheral |     |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM-M |      | Int. Vref | Comparator | OPA | CORDIC | QEI |
|----------------|---------|-----|------------|----------|-----------|-------|-------|-----|------------|-----|-----|-----|------|-----------------------|----------------------|-------|------|-----------|------------|-----|--------|-----|
|                |         |     |            |          |           | 32bit | 16bit | RTC | UART       | SPI | I2C | CH  | Bits |                       |                      | CH    | Bits |           |            |     |        |     |
| OB90A32M1U48VP | LQFP48  | 46  | 32         | 4        | 50        | 2     | 2     | v   | 2          | 1   | 2   | 12  | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 4          | 4   | v      | v   |
| OB90A64M1U48VP | LQFP48  | 46  | 64         | 8        | 50        | 2     | 2     | v   | 2          | 1   | 2   | 12  | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 4          | 4   | v      | v   |
| OB90A32M2U32VP | LQFP32  | 30  | 32         | 4        | 50        | 2     | 2     | v   | 2          | 1   | 2   | 5   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 3          | 4   | v      | v   |
| OB90A32M3U32VP | LQFP32  | 30  | 32         | 4        | 72        | 1     | 2     | -   | 1          | 1   | 1   | 13  | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 3          | 3   | v      | -   |

# 8-bit MCU BLDC/PMSM Control Solution

Motor Control for Anywhere



## 8-bit BLDC/PMSM Controller

**V** Build-in Gate driver, Up to DC 150V, Application for BLDC Motor

| Part No.   | Package | I/O | Flash (KB) | RAM(B) | IRC (MHz) | Timer 16bit | Peripheral |     |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM-M |      | Build-In |             |            |     | HW Protection    |
|------------|---------|-----|------------|--------|-----------|-------------|------------|-----|-----|-----|------|-----------------------|----------------------|-------|------|----------|-------------|------------|-----|------------------|
|            |         |     |            |        |           |             | UART       | SPI | I2C | CH  | Bits |                       |                      | CH    | Bits | LDO      | Gate Driver | Comparator | OPA |                  |
| OB6610GNP  | LQFP32  | 30  | 16         | 1280   | 22        | 3           | 1          | 1   | 1   | 8   | 10   | 1.8 ~ 5.5             | -40 ~ +85            | 8     | 14   | -        | -           | 3          | -   | -                |
| OB6710GNP  | LQFP32  | 30  | 32         | 1280   | 24        | 4           | 1          | -   | 1   | 13  | 12   | 1.8 ~ 5.5             | -40 ~ +85            | 6     | 14   | -        | -           | 3          | 1   | -                |
| OB6710FNP  | QFN32   | 30  | 32         | 1280   | 24        | 4           | 1          | -   | 1   | 13  | 12   | 1.8 ~ 5.5             | -40 ~ +85            | 6     | 14   | -        | -           | 3          | 1   | -                |
| OB6612GQP  | LQFP48  | 20  | 16         | 1280   | 22        | 3           | 1          | 1   | 1   | 8   | 10   | 4.4 ~ 35              | -40 ~ +85            | 6     | 14   | v        | 40V         | 3          | -   | OCP/SCP/OVP/ULVP |
| OB6613VKP  | TSSOP24 | 14  | 16         | 768    | 24        | 3           | 1          | -   | 1   | 13  | 10   | 4.4 ~ 35              | -40 ~ +85            | 6     | 14   | v        | 40V         | 3          | 1   | OCP/SCP/OVP/ULVP |
| OB6615FP   | QFN52   | 20  | 16         | 1280   | 22        | 3           | 1          | 1   | 1   | 7   | 10   | 4.6 ~ 19              | -40 ~ +85            | 6     | 14   | v        | 65V         | 3          | -   | OCP/SCP/OVP/ULVP |
| OB6616GP   | LQFP44  | 20  | 16         | 1280   | 22        | 3           | 1          | 1   | 1   | 7   | 10   | 10 ~ 17               | -40 ~ +85            | 6     | 14   | v        | 85V         | 3          | -   | OCP/SCP/OVP/ULVP |
| OB6617LGQP | LQFP48  | 20  | 16         | 1280   | 22        | 3           | 1          | 1   | 1   | 7   | 10   | 4.6 ~ 17              | -40 ~ +85            | 6     | 14   | v        | 65V         | 3          | -   | OCP/SCP/OVP/ULVP |
| OB6617GP   | LQFP48  | 20  | 16         | 1280   | 22        | 3           | 1          | 1   | 1   | 7   | 10   | 10 ~ 17               | -40 ~ +85            | 6     | 14   | v        | 85V         | 3          | -   | OCP/SCP/OVP/ULVP |
| OB6617HGQP | LQFP48  | 20  | 16         | 1280   | 22        | 3           | 1          | 1   | 1   | 7   | 10   | 10 ~ 20               | -40 ~ +85            | 6     | 14   | v        | 150V        | 3          | -   | OCP/SCP/OVP/ULVP |
| OB6619GQP  | LQFP48  | 22  | 16         | 768    | 24        | 3           | 1          | -   | 1   | 13  | 10   | 4.6 ~ 20              | -40 ~ +85            | 6     | 14   | v        | 70V         | 2          | 1   | OCP/SCP/OVP/ULVP |
| OB6619HGQP | LQFP48  | 22  | 16         | 768    | 24        | 3           | 1          | -   | 1   | 13  | 10   | 10 ~ 20               | -40 ~ +85            | 6     | 14   | v        | 150V        | 2          | 1   | OCP/SCP/OVP/ULVP |
| OB6717FPP  | QFN40   | 19  | 16         | 768    | 24        | 3           | 1          | -   | 1   | 10  | 12   | 4.6 ~ 20              | -40 ~ +85            | 6     | 14   | v        | 70V         | 2          | 1   | OCP/SCP/OVP/ULVP |

# 8-bit MCU BLDC/PMSM Control Solution

Motor Control for Anywhere



## 8-bit BLDC/PMSM Controller with Hardware FOC

**V** Build-in Gate driver, Up to DC 150V and Hardware FOC Algorithm

| Part No.   | Package | I/O | Flash (KB) | RAM(B) | IRC (MHz) | Timer | Peripheral |     |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM-M |      | Build-In |    |             |            |     | HW Protection    |
|------------|---------|-----|------------|--------|-----------|-------|------------|-----|-----|-----|------|-----------------------|----------------------|-------|------|----------|----|-------------|------------|-----|------------------|
|            |         |     |            |        |           | 16bit | UART       | SPI | I2C | CH  | Bits |                       |                      | CH    | Bits | LDO      | HF | Gate Driver | Comparator | OPA |                  |
| OB6635VIP  | TSSOP20 | 10  | 16         | 1280   | 16        | 2     | v          | 1   | 1   | 4   | 12   | 10 ~ 17               | -40 ~ +85            | 6     | 14   | v        | v  | 40V         | 3          | 1   | OCP/SCP/OVP/ULVP |
| OB6635VKP  | TSSOP24 | 14  | 16         | 1280   | 16        | 2     | v          | 1   | 1   | 5   | 12   | 10 ~ 17               | -40 ~ +85            | 6     | 14   | v        | v  | 40V         | 3          | 3   | OCP/SCP/OVP/ULVP |
| OB6636FNP  | QFN32   | 16  | 16         | 1280   | 16        | 2     | v          | 1   | 1   | 6   | 12   | 10 ~ 20               | -40 ~ +85            | 6     | 14   | v        | v  | 85V         | 3          | 3   | OCP/SCP/OVP/ULVP |
| OB6636HFNP | QFN32   | 16  | 16         | 1280   | 16        | 2     | v          | 1   | 1   | 6   | 12   | 10 ~ 20               | -40 ~ +85            | 6     | 14   | v        | v  | 150V        | 3          | 3   | OCP/SCP/OVP/ULVP |

## 8-bit BLDC/PMSM Controller with Hardware FOC

**V** Build-in Gate driver, Up to DC 650V and Hardware FOC Algorithm

| Part No.  | Package | I/O | Flash (KB) | RAM(B) | IRC (MHz) | Timer | Peripheral |     |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM-M |      | Build-In |    |             |            |     | HW Protection    |
|-----------|---------|-----|------------|--------|-----------|-------|------------|-----|-----|-----|------|-----------------------|----------------------|-------|------|----------|----|-------------|------------|-----|------------------|
|           |         |     |            |        |           | 16bit | UART       | SPI | I2C | CH  | Bits |                       |                      | CH    | Bits | LDO      | HF | Gate Driver | Comparator | OPA |                  |
| OB6633GQP | LQFP48  | 16  | 16         | 1280   | 16        | 2     | v          | 1   | 1   | 6   | 12   | 7.5 ~ 20              | -40 ~ +85            | 6     | 14   | -        | v  | 650V        | 3          | 3   | OCP/SCP/OVP/ULVP |

# 32-bit MCU BLDC/PMSM Control Solution

Motor Control for Anywhere



## 32-bit BLDC/PMSM Controller with FOC Algorithm

✓ Build-in Gate driver, Up to DC 150V, Application for BLDC Motor

| Part No.   | Package | I/O | Flash (KB) | RAM (KB) | Timer |       |     | Peripheral |     |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | MDU | Build-In |     |             |            | HW Protection    |
|------------|---------|-----|------------|----------|-------|-------|-----|------------|-----|-----|-----|------|-----------------------|----------------------|-----|----------|-----|-------------|------------|------------------|
|            |         |     |            |          | 32bit | 16bit | RTC | UART       | SPI | I2C | CH  | Bits |                       |                      |     | LDO      | OPA | Gate Driver | Comparator |                  |
| OB6625VIP  | TSSOP20 | 10  | 32         | 4        | 1     | 2     | -   | 1          | 1   | 1   | 5   | 12   | 10 ~ 17               | -40 ~ +105           | v   | v        | 1   | 40V         | 2          | OCP/SCP/OVP/ULVP |
| OB6625VKP  | TSSOP24 | 14  | 32         | 4        | 1     | 2     | -   | 1          | 1   | 1   | 6   | 12   | 10 ~ 17               | -40 ~ +105           | v   | v        | 3   | 40V         | 3          | OCP/SCP/OVP/ULVP |
| OB6625FLP  | QFN28   | 19  | 32         | 4        | 1     | 2     | -   | 1          | 1   | 1   | 9   | 12   | 10 ~ 17               | -40 ~ +105           | v   | v        | 3   | 40V         | 3          | OCP/SCP/OVP/ULVP |
| OB6626GQP  | QFN64   | 31  | 64         | 8        | 2     | 2     | V   | 2          | 1   | 1   | 8   | 12   | 10 ~ 17               | -40 ~ +105           | v   | v        | 4   | 85V         | 4          | OCP/SCP/OVP/ULVP |
| OB6627GPP  | LQFP44  | 21  | 32         | 4        | 2     | 2     | V   | 1          | 1   | 1   | 6   | 12   | 8 ~ 20                | -40 ~ +105           | v   | v        | 3   | 85V         | 4          | OCP/SCP/OVP/ULVP |
| OB6627GQP  | LQFP48  | 23  | 32         | 4        | 2     | 2     | V   | 1          | 1   | 1   | 8   | 12   | 8 ~ 20                | -40 ~ +105           | v   | v        | 3   | 85V         | 4          | OCP/SCP/OVP/ULVP |
| OB6627LGQP | LQFP48  | 23  | 32         | 4        | 2     | 2     | V   | 1          | 1   | 1   | 8   | 12   | 4.4 ~ 20              | -40 ~ +105           | v   | v        | 3   | 65V         | 4          | OCP/SCP/OVP/ULVP |
| OB6627HGQP | LQFP48  | 23  | 32         | 4        | 2     | 2     | V   | 1          | 1   | 1   | 8   | 12   | 7.5 ~ 20              | -40 ~ +105           | v   | v        | 3   | 150V        | 4          | OCP/SCP/OVP/ULVP |
| OB6628GQP  | LQFP48  | 22  | 32         | 4        | 1     | 2     | -   | 1          | 1   | 1   | 11  | 12   | 8 ~ 20                | -40 ~ +105           | v   | v        | 3   | 85V         | 3          | OCP/SCP/OVP/ULVP |
| OB6628LGQP | LQFP48  | 22  | 32         | 4        | 1     | 2     | -   | 1          | 1   | 1   | 11  | 12   | 4.4 ~ 20              | -40 ~ +105           | v   | v        | 3   | 70V         | 3          | OCP/SCP/OVP/ULVP |
| OB6728SFPP | QFN40   | 22  | 32         | 8        | 1     | 2     | -   | 1          | 1   | 1   | 13  | 12   | 4.4 ~ 20              | -40 ~ +105           | v   | v        | 1   | 70V         | 3          | OCP/SCP/OVP/ULVP |
| OB6728SFXP | QFN32   | 15  | 32         | 8        | 1     | 2     | -   | 1          | 1   | 1   | 13  | 12   | 4.4 ~ 20              | -40 ~ +105           | v   | v        | 1   | 70V         | 3          | OCP/SCP/OVP/ULVP |
| OB6728HFXP | QFN32   | 16  | 32         | 8        | 1     | 2     | -   | 1          | 1   | 1   | 13  | 12   | 8 ~ 20                | -40 ~ +105           | v   | v        | 1   | 200V        | 3          | OCP/SCP/OVP/ULVP |

# 32-bit MCU BLDC/PMSM Control Solution

Motor Control for Anywhere



## 32-bit BLDC/PMSM Controller with FOC Algorithm

✓ Application for High or Low voltage BLDC Motor

| Part No.  | Package | I/O | Flash (KB) | RAM (KB) | Max. Speed (MHz) | Timer |       |     | Peripheral |     |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM-M |      | Int. Vref | Comparator | OPA | CORDIC | QEI |
|-----------|---------|-----|------------|----------|------------------|-------|-------|-----|------------|-----|-----|-----|------|-----------------------|----------------------|-------|------|-----------|------------|-----|--------|-----|
|           |         |     |            |          |                  | 32bit | 16bit | RTC | UART       | SPI | I2C | CH  | Bits |                       |                      | CH    | Bits |           |            |     |        |     |
| OB6620VLP | TSSOP28 | 26  | 32         | 4        | 50               | 2     | 2     | v   | 2          | 1   | 2   | 8   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 4          | 2   | -      | -   |
| OB6621GNP | LQFP32  | 30  | 32         | 4        | 50               | 2     | 2     | v   | 2          | 1   | 2   | 7   | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 4          | 4   | v      | -   |
| OB6622GQP | LQFP48  | 46  | 32         | 4        | 50               | 2     | 2     | v   | 2          | 1   | 2   | 12  | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 4          | 4   | v      | v   |
| OB6623GNP | LQFP32  | 30  | 32         | 4        | 72               | 2     | 1     | -   | 1          | 1   | 1   | 13  | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 3          | 3   | v      | -   |
| OB6624FPP | QFN44   | 42  | 32         | 4        | 50               | 2     | 2     | v   | 2          | 1   | 2   | 12  | 12   | 1.8 ~ 5.5             | -40 ~ +105           | 6     | 16   | v         | 4          | 4   | v      | v   |

# 04

## OB Solution & Applications

- 2.4G RF Wireless Controller & Module Board
- Li-Ion Power Bank Controller
- Ultra Voltage Home Appliance 8-bit Flash Controller
  - Induction Cooker Controller
  - Electric Heating Controller
  - Electric Scale 24bit Sigma-Delta ADC Controller
- Thermal Receipt Printer 32-bit USB Controller

# OB Solution & Applications

- 2.4G RF Wireless Controller & Module Board – OB612x/ OBM612x series
- Li-Ion Power Bank Controller – OB2112 series
- Home Appliance 8-bit Flash Controller for Induction Cooker Controller – OB665x series
- Home Appliance 8-bit Flash Controller for Electric Heating Controller – OB55xx series
- Home Appliance 8-bit Flash Controller for Electric Scale 24bit Sigma-Delta ADC Controller – OB1021 series
- Thermal Receipt Printer 32-bit USB Controller – OB6632 series

# 2.4G RF Wireless Controller & Module Board

Home Appliance for Your Life



## 2.4G RF Wireless Controller

| Part No.  | Package | I/O | Flash (KB) | RAM (B) | IRC (MHz) | Timer | Peripheral |      |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C) | PWM |      | Operating Frequency (MHz) | Transmission rate (bps) |
|-----------|---------|-----|------------|---------|-----------|-------|------------|------|-----|-----|------|-----------------------|----------------------|-----|------|---------------------------|-------------------------|
|           |         |     |            |         |           | 16bit | UART       | RSSI | I2C | CH  | Bits |                       |                      | CH  | Bits |                           |                         |
| OB6121VP  | TSSOP20 | 2   | 8          | 256     | 22        | 2     | -          | v    | 1   | 2   | 10   | 2.0 ~ 3.6             | -40 ~ +85            | 2   | 10   | 2400 ~ 2483               | 250K/2M                 |
| OB6122VP  | TSSOP20 | 8   | 16         | 512     | 22        | 3     | 1          | v    | 1   | 4   | 10   | 2.0 ~ 3.6             | -40 ~ +85            | 2   | 10   | 2400 ~ 2483               | 250K/2M                 |
| OB6122LVP | TSSOP20 | 12  | 16         | 512     | 22        | 3     | 1          | v    | 1   | 7   | 10   | 2.0 ~ 3.6             | -40 ~ +85            | 3   | 10   | 2400 ~ 2483               | 250K/2M                 |
| OB6123VP  | TSSOP24 | 9   | 16         | 1280    | 22        | 2     | 1          | v    | 1   | -   | -    | 2.0 ~ 3.6             | -40 ~ +85            | 3   | 10   | 2400 ~ 2483               | 250K/2M                 |
| OB6125VP  | TSSOP24 | 9   | 64         | 1280    | 22        | 3     | 1          | v    | 1   | -   | -    | 2.0 ~ 3.6             | -40 ~ +85            | 4   | 10   | 2400 ~ 2483               | 250K/2M                 |

## 2.4G RF Wireless Module Board

| 产品型号     | 封装      | 发射功耗 (mA) | 应用方案      | 接收灵敏度 (dBm) | 数据速率 (bps) | 频带范围 (MHz) | 最大发射功率 | 接收功耗 (mA) | 电压范围 (V)  | 温度范围 (°C) |
|----------|---------|-----------|-----------|-------------|------------|------------|--------|-----------|-----------|-----------|
| OBM6121  | TSSOP20 | 32 @8dbm  | 2.4G 遥控器  | -88 @1Mbps  | 250K/2M    | 2400 ~2483 | 8 dBm  | 20        | 2.0 ~ 3.6 | -40 ~ +85 |
| OBM6122L | TSSOP20 | 32 @8dbm  | 2.4G 无线调光 | -88 @1Mbps  | 250K/2M    | 2400 ~2483 | 8 dBm  | 20        | 2.0 ~ 3.6 | -40 ~ +85 |

# Li-Ion Power Bank Controller

Home Appliance for Your Life



## Li-Ion Power Bank Controller

| Part No. | Package | I/O | Output Power | Buck/Boost Efficiency | Sleep Current (uA) | Timer | Peripheral |     | Operating Voltage (V) | Operating Temp. (°C) | Buck/Boost Frequency (KHz) | Build-In |                   | HW Protection        |
|----------|---------|-----|--------------|-----------------------|--------------------|-------|------------|-----|-----------------------|----------------------|----------------------------|----------|-------------------|----------------------|
|          |         |     |              |                       |                    | 16bit | UART       | I2C |                       |                      |                            | LDO      | Buck/Boost Driver |                      |
| OB2112UP | TSSOP20 | 5   | 2.4A @ 5V    | 91%                   | 50                 | 3     | 1          | 1   | 2.6 ~ 6               | -40 ~ +85            | 300/600                    | v        | v                 | OCP/SCP/OVP/OTP/ULVP |
| OB2112VP | TSSOP28 | 12  | 2.4A @ 5V    | 91%                   | 50                 | 3     | 1          | 1   | 2.6 ~ 6               | -40 ~ +85            | 300/600                    | v        | v                 | OCP/SCP/OVP/OTP/ULVP |
| OB2112FP | QFN28   | 12  | 2.4A @ 5V    | 91%                   | 50                 | 3     | 1          | 1   | 2.6 ~ 6               | -40 ~ +85            | 300/600                    | v        | v                 | OCP/SCP/OVP/OTP/ULVP |

# Ultra Voltage Home Appliance 8-bit Flash Controller

Home Appliance for Your Life

## Induction Cooker Controller

| Part No.  | Package | I/O | ROM<br>(KB) | RAM<br>(B) | HIRC<br>(MHz) | Timer |     | Peripheral |     | ADC |      | Operating<br>Voltage<br>(V) | Operating<br>Temp.<br>(°C) | PWM |      | Build-In |     |               |                |     |      | HW<br>Protection       |
|-----------|---------|-----|-------------|------------|---------------|-------|-----|------------|-----|-----|------|-----------------------------|----------------------------|-----|------|----------|-----|---------------|----------------|-----|------|------------------------|
|           |         |     |             |            |               | 16bit | PCA | UART       | I2C | CH  | Bits |                             |                            | CH  | Bits | LDO      | ZDI | HV-<br>MOSFET | IGBT<br>Driver | OPA | ACMP |                        |
| OB6652CKP | SOP24   | 5   | 16          | 256        | 22            | 3     | -   | 1          | 1   | 5   | 10   | 13 ~ 24                     | -40 ~ +85                  | -   | -    | v        | v   | 3             | v              | -   | -    | Surge/OCP/OVP/OTP/ULVP |
| OB6653CIP | SOP20   | 5   | 16          | 256        | 22            | 3     | -   | 1          | 1   | 5   | 10   | 13 ~ 24                     | -40 ~ +85                  | -   | -    | v        | v   | -             | v              | -   | -    | Surge/OCP/OVP/OTP/ULVP |
| OB6654CGP | SOP16   | 12  | 8           | 256        | 8             | 4     | -   | 1          | 1   | 8   | 12   | 10~ 22                      | -40 ~ +85                  | 2   | 10   | v        | v   | -             | v              | 1   | 6    | Surge/OCP/OVP/OTP/ULVP |
| OB6654CIP | SOP20   | 14  | 8           | 256        | 8             | 4     | -   | 1          | 1   | 8   | 12   | 10 ~ 22                     | -40 ~ +85                  | 2   | 10   | v        | v   | -             | v              | 1   | 6    | Surge/OCP/OVP/OTP/ULVP |
| OB6657CIP | SOP20   | 14  | 8           | 256        | 8             | 4     | v   | 1          | 1   | 8   | 12   | 10 ~ 22                     | -40 ~ +85                  | 2   | 10   | v        | v   | 1             | v              | 1   | 6    | Surge/OCP/OVP/OTP/ULVP |

## Electric Heating Controller

| Part No.  | Package | I/O | ROM<br>(KB) | RAM<br>(B) | HIRC<br>(MHz) | Timer |     | Peripheral |     | ADC |      | Operating<br>Voltage<br>(V) | Operating<br>Temp.<br>(°C) | PWM |      | Build-In |     |              |               | LED Driver |     |
|-----------|---------|-----|-------------|------------|---------------|-------|-----|------------|-----|-----|------|-----------------------------|----------------------------|-----|------|----------|-----|--------------|---------------|------------|-----|
|           |         |     |             |            |               | 16bit | PCA | UART       | I2C | CH  | Bits |                             |                            | CH  | Bits | LDO      | ZDI | Touch<br>Key | 30V<br>MOSFET | COM        | SEG |
| OB5512KP  | SOP20   | 13  | 8           | 512        | 22            | 2     | 1   | -          | 1   | 5   | 10   | 8 ~ 24                      | -40 ~ +85                  | 3   | 10   | v        | v   | -            | 3             | -          | -   |
| OB5513CP  | SOP28   | 13  | 8           | 1280       | 22            | 2     | 1   | 1          | 1   | 8   | 10   | 8 ~ 24                      | -40 ~ +85                  | -   | -    | v        | v   | -            | 3             | -          | -   |
| OB5531CLP | SOP28   | 19  | 15          | 768        | 16            | 2     | 1   | 1          | 1   | 7   | 12   | 10.8 ~ 30                   | -40 ~ +85                  | 3   | 10   | v        | v   | 12           | 3             | 6          | 11  |
| OB5532CP  | SOP28   | 21  | 32          | 1024       | 22            | 3     | 1   | 2          | 1   | 8   | 12   | 10.8 ~ 30                   | -40 ~ +85                  | 3   | 10   | v        | v   | 8            | 3             | 7          | 13  |
| OB5533GP  | LQFP33  | 25  | 32          | 1024       | 22            | 3     | 1   | 2          | 1   | 8   | 12   | 10.8 ~ 30                   | -40 ~ +85                  | 4   | 10   | v        | v   | 8            | 3             | 7          | 16  |

# Ultra Voltage Home Appliance 8-bit Flash Controller

Home Appliance for Your Life

## Electric Scale 24bit Sigma-Delta ADC Controller

| Part No.  | Package | I/O | ROM (KB) | RAM (B) | HIRC (MHz) | Timer | Peripheral |     | ADC |      | Operating Voltage (V) | Operating Temp. (°C ) | PWM |      | Build-In |              |
|-----------|---------|-----|----------|---------|------------|-------|------------|-----|-----|------|-----------------------|-----------------------|-----|------|----------|--------------|
|           |         |     |          |         |            | 16bit | UART       | I2C | CH  | Bits |                       |                       | CH  | Bits | LDO_Out  | Temp. Sensor |
| OB1021CGP | SOP16   | 10  | 16       | 768     | 10         | 2     | 1          | 1   | 2   | 24   | 2.4~5.5               | -40 ~ +85             | 2   | 10   | v        | v            |
| OB1021VIP | TSSOP20 | 12  | 16       | 768     | 10         | 2     | 1          | 1   | 2   | 24   | 2.4~5.5               | -40 ~ +85             | 2   | 10   | v        | v            |
| OB1021CKP | SOP24   | 14  | 16       | 768     | 10         | 2     | 1          | 1   | 2   | 24   | 2.4~5.5               | -40 ~ +85             | 2   | 10   | v        | v            |

# Thermal Receipt Printer 32-bit USB Controller

OB Solution & Applications

## *Thermal Receipt Printer Controller*

| Part No.  | Package | I/O | ROM<br>(KB) | RAM<br>(B) | Max.<br>Speed<br>(MHz) | Timer |       |     | Peripheral |     |     |     | ADC |      | Operating<br>Voltage<br>(V) | Operating<br>Temp.<br>(°C) | PWM-M |      | Build-In |                    | USB 2.0<br>(Full speed) | HW<br>Protection |
|-----------|---------|-----|-------------|------------|------------------------|-------|-------|-----|------------|-----|-----|-----|-----|------|-----------------------------|----------------------------|-------|------|----------|--------------------|-------------------------|------------------|
|           |         |     |             |            |                        | 32bit | 16bit | RTC | UART       | SPI | I2C | I2S | CH  | Bits |                             |                            | CH    | Bits | LDO      | H-Bridge<br>Driver |                         |                  |
| OB6632FQP | QFN48   | 32  | 64          | 32         | 72                     | 1     | 5     | v   | 3          | 2   | 2   | 1   | 10  | 12   | 3.6 ~ 12                    | -40 ~ +105                 | 6     | 16   | V        | 2                  | v                       | OCP/OVP/TSD/ULVP |

# 05

## Development Tools

- MSM9068 For 32-Bit ISP/ICP/ICE
- MSM9066 For 8-Bit 8051 Core ISP/ICP/ICE
- MSM9060 For 8-Bit PIC Core ISP/ICP/ICE
- SMAP 烧录工具软件
- ChipWatcher / PICStudio 仿真工具软件

# MSM9060 / MSM9066 / MSM9068系统开发工具

Development Tools



**MSM9068**  
For ARM base ISP/ICP/ICE



**MSM9066**  
For 8051 base ISP/ICP/ICE



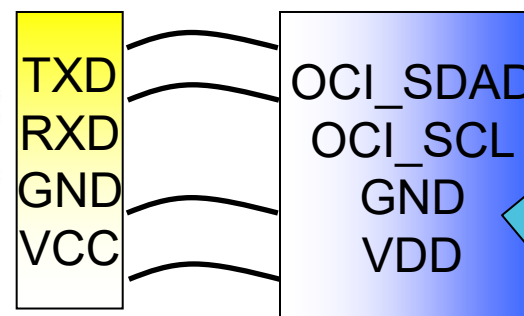
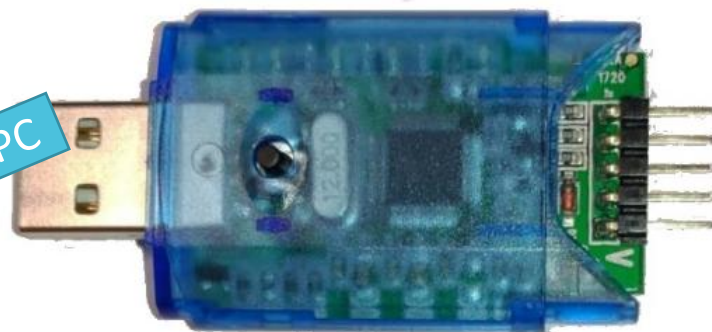
**MSM9060**  
For PIC Base ISP/ICP/ICE

**MSM9068 / MSM9066 / MSM9060:**

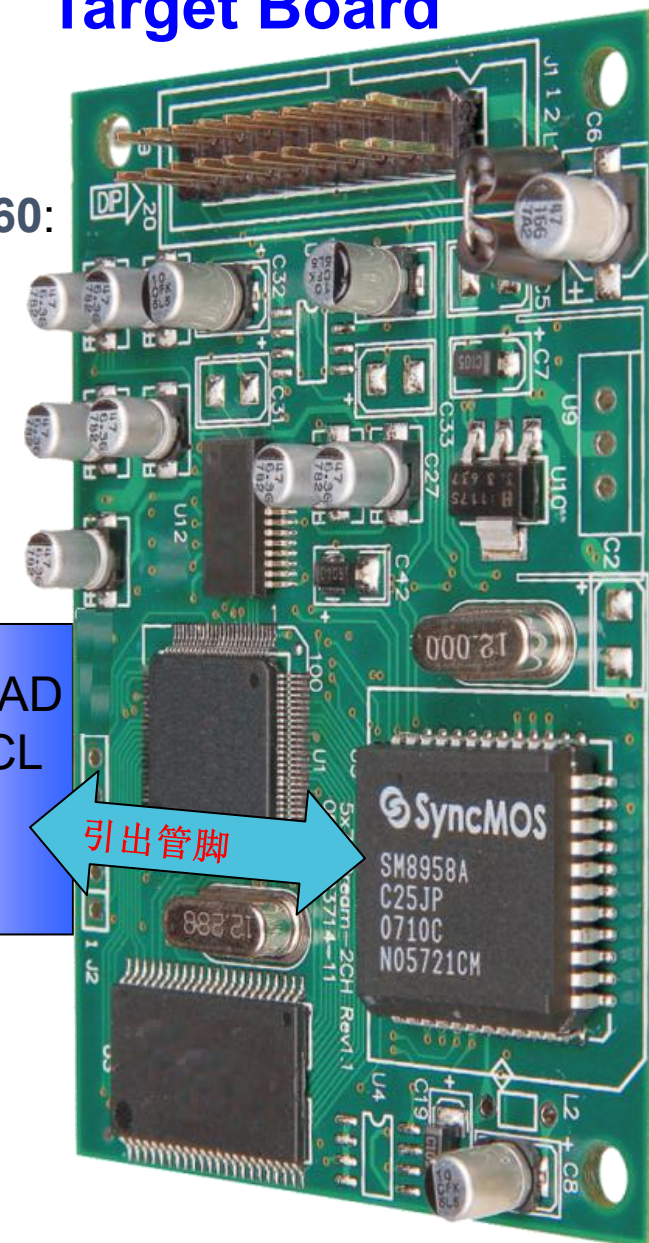
- ✓ 在线烧录(ISP/ICP)
- ✓ 脱机烧录(ISP/ICP)
- ✓ 在线仿真(ICE)



USB to NB & PC



**Target Board**



- 烧录工具:软件(SMAP)搭配硬件(MSM9068 & MSM9066 )
- 仿真工具:软件(Chipwatcher)搭配硬件(MSM9068 & MSM9066)
- 软件(PICStudio)搭配硬件(MSM9060)

# 烧录工具(SMAP) 及仿真工具(Chipwatcher) 下载

Development Tools



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## News Update 最新消息

### 2023Q4烧录软体/开发软体/例程更新

SMAP 安装软件更新至 V9.0.8.1482

Matrix(OBP9190一拖十量产型烧录器) 安装软体更新至 V2.0.0.1017

Uniter(OBP9191一拖一量产型烧录器) 安装软体更新至 V1.4.2.1013

ChipWatcher安装软件更新至 V5.34.2.1127

Touchlyzer 安装软件更新至 V3.7.1.1089

PICStudio 安装软件更新至 V1.3.0.1006

下载烧录工具(SMAP)

下载仿真工具(Chipwatcher)

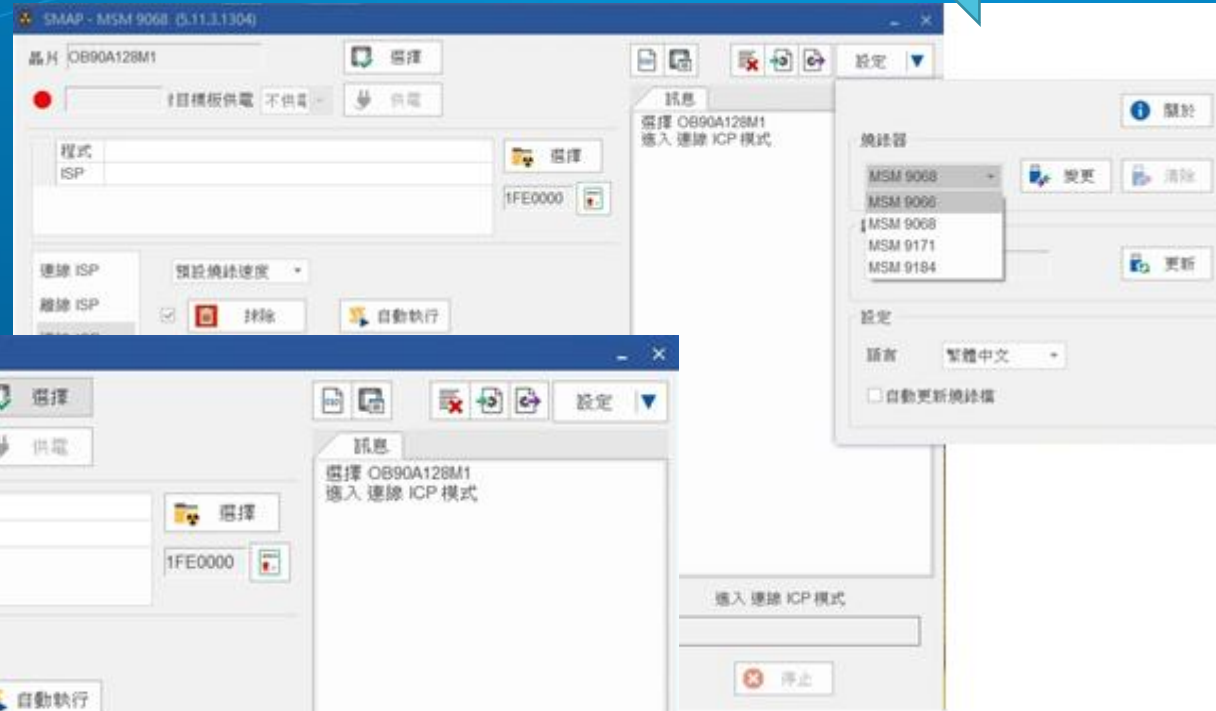
下载仿真工具(PICStudio)

# 烧录工具:软件(SMAP)搭配硬件(MSM9068 / MSM9066 /MSM9060)

Development Tools

选择搭配硬件

切换搭配硬件

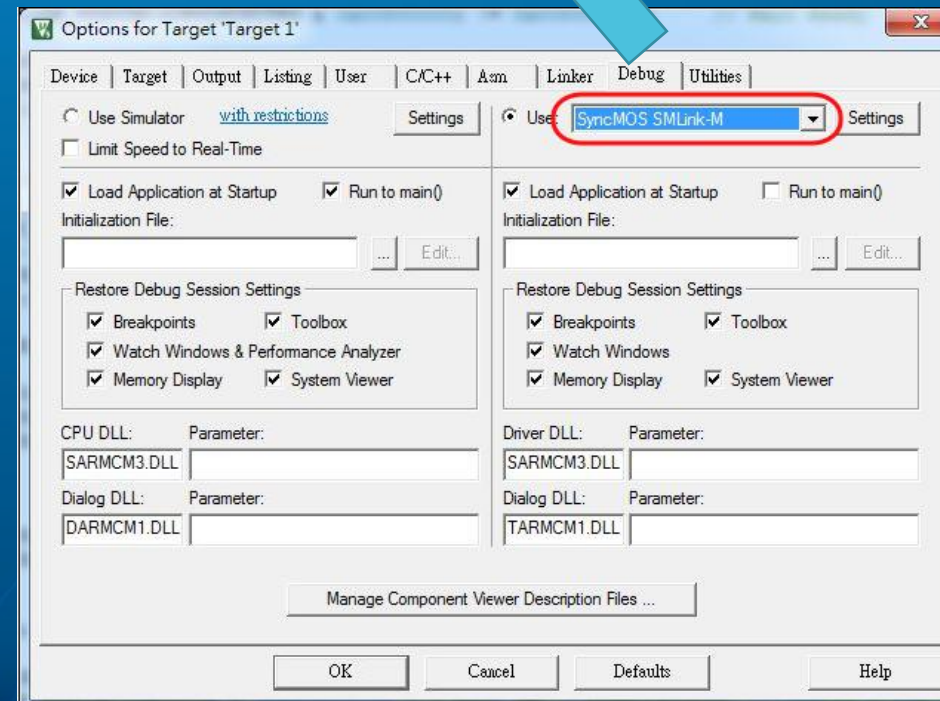
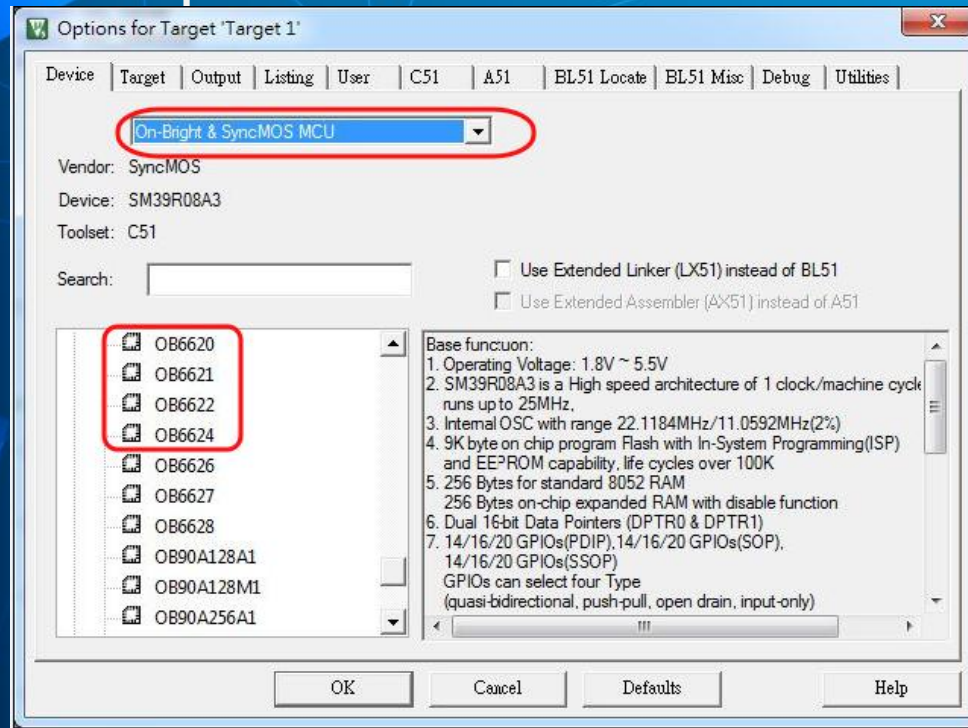


SMAP操作接口

# 仿真工具:软件(Chipwatcher)搭配硬件(MSM9068 & MSM9066)

Development Tools

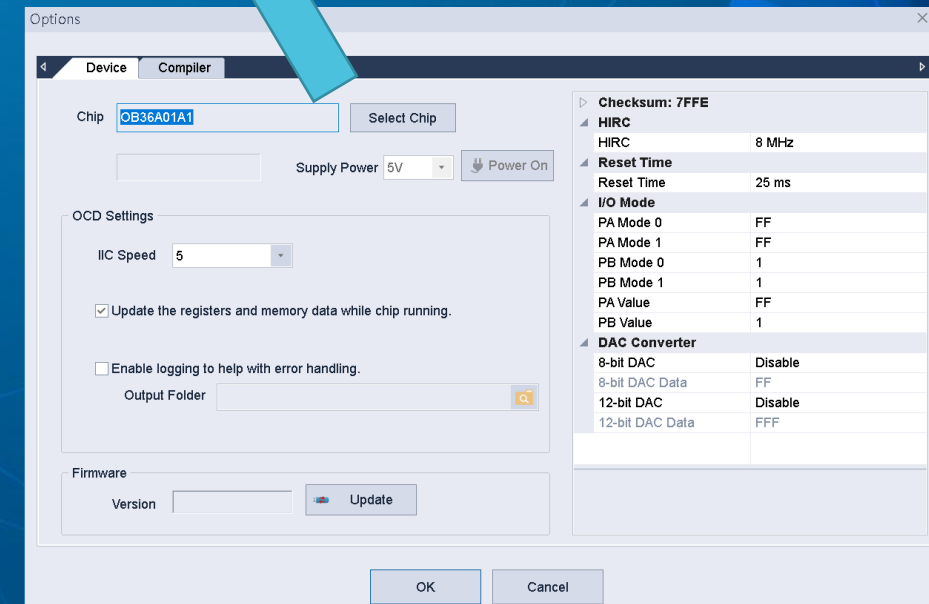
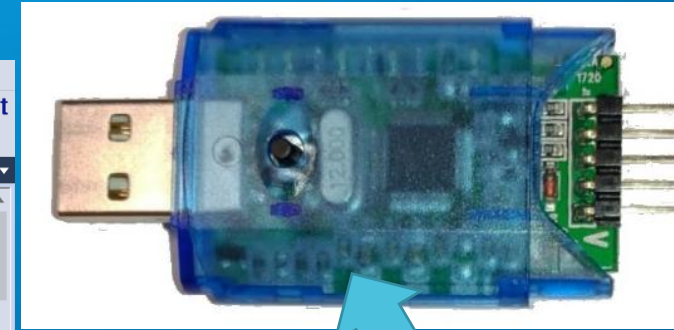
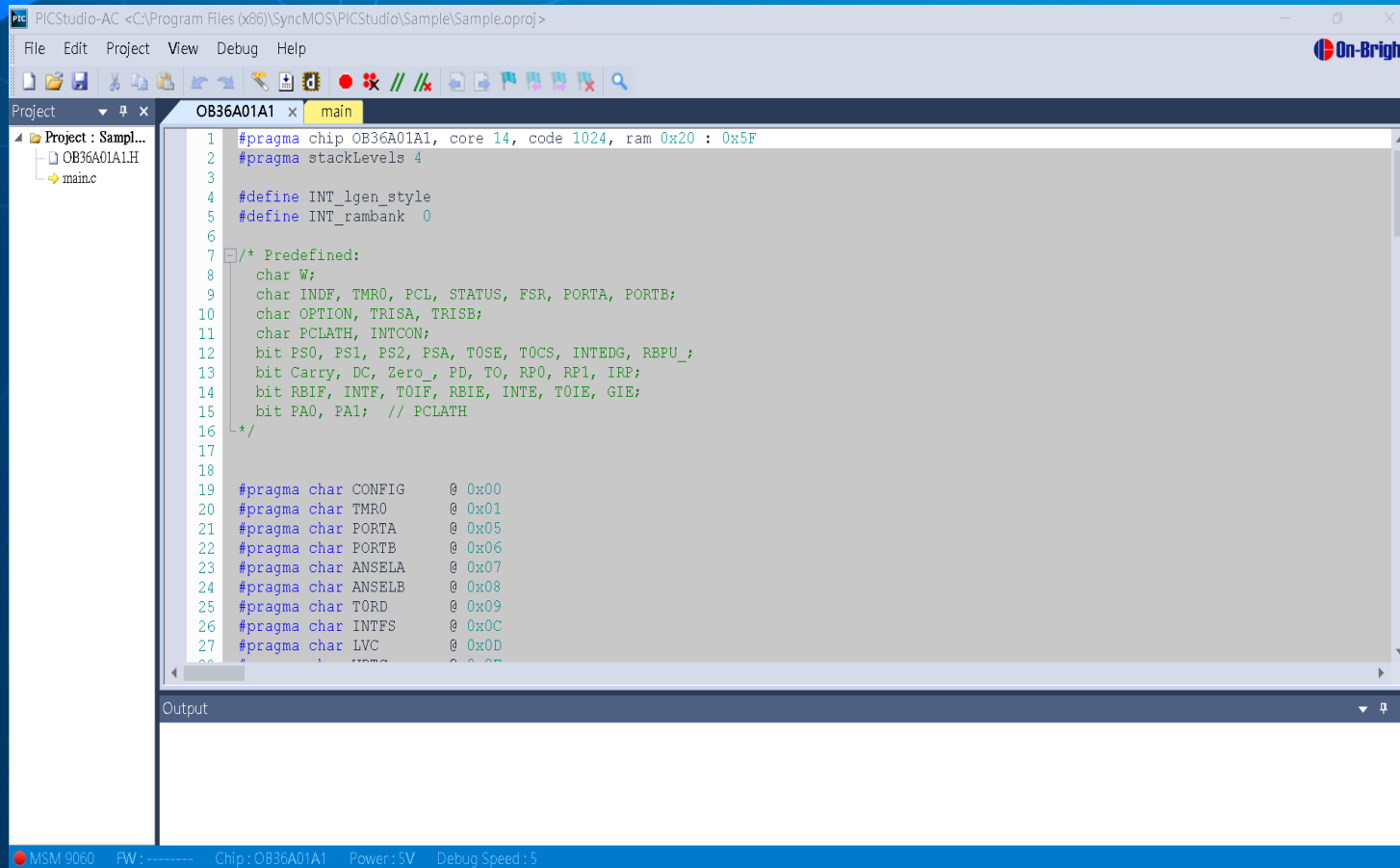
## Chipwatcher and SMLinkM :



# 仿真工具:软件(PICStudio)搭配硬件(MSM9060)

Development Tools

PICStudio :





# THANK YOU

Q & A